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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/023,460	12/13/2001	Charles E. Taylor	SHPR-01041USJ SRM	3479

29190 7590 01/30/2006

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EXAMINER	
TRAN, THAO T	
ART UNIT	**PAPER NUMBER**
1711	

DATE MAILED: 01/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/023,460	TAYLOR ET AL.	
	Examiner	Art Unit	
	Thao T. Tran	1711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This is in response to the Amendments filed on 11/09/2005.

2. Claims 25-40, 42-57, 59-60, 82-86, 92-94, 100, 102 are currently pending in this application. Claims 25, 44, 92, 102 have been amended in this Reply.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 25-40, 42-57, 59-60, 82-86, 92-94, 100, 102 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 25, 44, 92, and 102 recite the limitation "cylindrical inner opening" or "cylinder" that are considered as new matter because they have no adequate support in the application as originally presented. Neither the specification nor the Figures show a cylindrical inner opening in the electrode.

Note: According to Merriam-Webster Online, a cylinder is defined as "the surface traced by a straight line moving parallel to a fixed straight line and intersecting a fixed planar closed curve".

5. In view of the prior Office action of 7/05/2005, the rejection of claims 25-40, 42-57, 59-60, 82-86, 92-94, 100, 102 under 35 U.S.C. 112, second paragraph, has been withdrawn due to the Amendments made thereto.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 25-33, 35-37, 39, 42-52, 54-56, 59, 82-86, 92-94, and 100-102 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawashima (US Pat. 4,516,991) in view of Fritzius (US Pat. 3,638,058).

Kawashima teaches an air cleaning apparatus (electro-kinetic air transporter), comprising an upstanding, elongated casing (housing) with an air inlet in front and an air outlet in the rear, a plurality of dust collecting panel electrodes arranged in parallel, ionizing wires, a voltage source connected to the dust collecting electrodes and the ionizing wires such that an air flow is created between the ionizing wires and the collecting electrodes (see Fig. 2-9; col. 1, ln. 8-29). Kawashima further teaches a base to support the housing in an upstanding position (see Figs. 2-

5). Kawashima further teaches a power source E1, power switch 27 (see Figs. 2 & 4; col. 4, ln. 63-64).

Kawashima, however, does not teach a pin-ring electrode configuration.

Fritzius teaches an ion wind generator, comprising pairs of pin-shaped cathodes and ring-shaped anodes; wherein an air stream flows from the cathodes toward the anodes (see Fig. 1; col. 1, ln. 8-20). Fritzius further teaches that with this configuration a heavy flow of wind is created, resulting in extremely effective and inexpensive ion generator. Fritzius also teaches the ring anodes attracting some ionized particles in the air stream flowing through the anodes (see Fig. 1; paragraph bridging col. 1-2). The anodes in Fritzius appear to have a donut shape or the shape of a tire, thus they appear to have the same surface as presently claimed. As shown in Fig. 1 of Fritzius, the inner surface area of the ring electrode where the dust particles are collected would be the same as those shown in Figs. 4J-4K of the instant specification. Thus, Fritzius appears to read on the presently claimed flat region of sufficient surface area to collect particulate matter.

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have employed the pin-ring electrode configuration, as taught by Fritzius, in the air cleaning apparatus of Kawashima, for the purpose of improving the efficacy and cost of the apparatus.

The cathodes of Fritzius have the tips that has a cone shape (see Fig. 1). Since it is the tips of the cathodes that emits ions, it would have been obvious to one of ordinary skill in the art, that the cathodes of Fritzius would have worked as equally well as the presently claimed cathodes.

Fritzius further teaches the use of alternating pulses in order to accelerate the speed of the ions or airflow further (see col. 1, ln. 23-25; col. 2, ln. 33-37). Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have employed pulse voltage as taught by Fritzius in the apparatus of Kawashima, for the purpose of increasing the airflow and also minimizing anode current thereby reducing electrolysis effects (see col. 1, ln. 30-32).

Kawashima is silent with respect to a user control being located on the top surface of the housing. However, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, that whether a user control is on the top surface or on the stand, it would have worked equally well.

The same arguments are presented for the shape of the housing.

Kawashima teaches the apparatus having a handle 9 (see Fig. 4). The reference is silent with respect to the use of a handle to assist in removal of the second electrode out through the top of the housing. However, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, that Kawashima's handle would play a role in assisting the removal of the second electrode; and that how the second electrode would be removed from the housing would have little patentable weight in an apparatus claim.

8. Claims 34, 40, 53, and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawashima and Fritzius as applied to claims 25 and 44 above, and further in view of Anzai (US Pat. 4,772,297).

Kawashima and Fritzius are as set forth in claims 25 and 44 above and incorporated herein.

The Kawashima combination does not teach the air inlet and air outlet to be covered with louvers.

Anzai teaches the use of air inlet and air outlet with louvers B1 and B2 (see Fig. 1-4). Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have included the louvers covering the inlet and outlet, as taught by Anzai, in the apparatus of the Kawashima combination, for the purpose of providing better control of the airflow into and out of the apparatus.

9. Claims 38 and 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawashima and Fritzius as applied to claims 25 and 44 above, and further in view of Taylor.

Kawashima and Fritzius are as set forth in claims 25 and 44 above and incorporated herein.

The Kawashima combination does not teach the pin electrode including a plurality of conductive fibers.

Taylor teaches the pin electrode comprising conductive fibers (see Fig. 4K; col. 10, ln. 26-36). Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have employed the pin electrodes comprising conductive fibers, as taught by Taylor, in the apparatus of the Kawashima combination, for the purpose of more emitting surfaces, hence enhancing the output of ions.

Response to Arguments

10. Applicant's arguments filed on 11/07/2005 have been fully considered but they are not persuasive.

The rejection of claims, under 112, first paragraph, is still maintained because a cylinder as defined by Merriam-Webster is when "the surface traced by a straight line moving parallel to a fixed straight line and intersecting a fixed planar closed curve". The examiner does not agree that the parallel surface in a cylinder can be curved as argued by Applicants.

Applicants contend that Fritzius cannot be used to remedy Kawashima, because Fritzius only teaches ion collection and not collection of dust or other particulate matter. However, as disclosed by Fritzius, the cathodes generate ions that would ionize air molecules and produce charged particles in the air, thus creating an airflow toward the anodes. Hence, Fritzius does teach the anodes collecting particulate matter.

With respect to Applicants' argument that the ring illustrated in Fritzius lacks the sufficient surface area needed to collect dust and other particulates, it is hereby noted that the ring in Fritzius does not have the flat surface. However, as illustrated in Figs. 4J-4K in the instant specification, the surface area on the ring where particulate collection occurs is similar to that in Fritzius.

Applicants further argue that Fritzius teaches a symmetric, rather than staggered, arrangement of the pin-ring configuration. However, as shown in Fritzius, the cathodes are directly pointing towards the center of the opening in the anodes, and the pin-ring configuration in Fritzius appears to be as effective as the presently claimed invention in collecting particulate matter.

The same arguments are presented in response to Applicants' argument with respect to the Anzai or Taylor combination.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thao T. Tran whose telephone number is 571-272-1080. The examiner can normally be reached on Monday-Friday, from 9:00 a.m. - 5:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thao Tran

tt
January 23, 2006

THAO T. TRAN
PATENT EXAMINER